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(57) 【要約】

【課題】 携帯端末装置などが水没したか否かを下ケースを見ただけで判別しうる水没確認装置を提供する。

【解決手段】 孔 3 が設けられている下ケース 2 と、孔 3 の周囲を囲むように両面を接着する両面接着部材 4 と、孔 3 の周囲を囲むように両面を接着する両面接着部材 4 と、孔 3 から浸入する水を遮断すると共に水没確認シール 10 の状態変化を表面から覗けるようにした透明シート 5、透明シート 5 及び白色上質紙 7 の両端位置に配置される両面接着部材 6 および中央に水性インクで赤色印刷 8 が施された白色上質紙 7 から成る水没確認シール 10 とから構成されており、孔 3 は下ケース 2 に搭載される他の部品によって見えなくなることがない箇所に穿けられており、例えば保持部材 1 の上に位置される。

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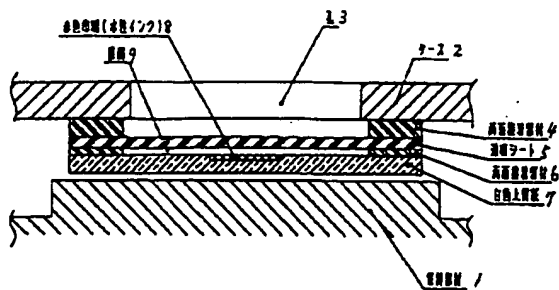
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(57) [Abstract]

[Problem] Whether or not which portable terminal equipment etc submerges just looked at lower case the submerging verification equipment which it can distinguish is offered.

[Means of Solution] Hole 3 is provided lower case 2 where, In order to surround periphery of hole 3, glues both sides the both sides adhesive component 4 which, In order to surround periphery of hole 3, glues both sides the both sides adhesive component 4 which, As water which penetrates from hole 3 is blocked it tried to be able to look state change of submerging verification seal 10 from the surface transparent sheet 5, We are constituted from submerging verification seal 10 which consists of white high quality paper 7 where red color printing 8 is administered to both sides adhesive component 6 and center being arranged in both ends position of the transparent sheet 5 and white high quality paper 7 with water-based ink, hole 3 is worn in the site which does not have fact that it stops being visible with the other part which is installed in lower case 2 is



## 【特許請求の範囲】

【請求項 1】 水没確認が行なえる孔が設けられている下ケースと、前記孔の周囲を囲むように両面を接着する両面接着部材と、後記する水没確認シールの状態変化を表面から覗けるようにした透明シート、前記透明シート及び後記する白色上質紙の両端位置に配置される両面接着部材および中央に水性インクで赤色印刷が施された白色上質紙から成る水没確認シールとから構成されることを特徴とする水没確認装置。

【請求項 2】 前記孔は、下ケースに搭載される他の部品によって見えなくなることがない箇所に穿けられていることを特徴とする請求項 1 記載の水没確認装置。

【請求項 3】 前記透明シートは、前記孔の周囲を囲むように両面を接着する両面接着部材との接着により、前記孔から浸入する水を遮断すると共に押し込まれたとしても剥がれる虞れがないようにしたことを特徴とする請求項 1 記載の水没確認装置。

【請求項 4】 前記水没確認シールは、プリント基板上の保持部材との間でわずかな隙間をもって構成されていることを特徴とする請求項 1 記載の水没確認装置。

【請求項 5】 前記水没確認シールと前記プリント基板上の保持部材との間の隙間は、水没確認シールの厚みよりも狭いことを特徴とする請求項 4 記載の水没確認装置。

located on the for example holding member 1.

## [Claim(s)]

[Claim 1] Hole which can do submerging verification is provided lower casewhere, In order to surround periphery of aforementioned hole, glues theboth sides both sides adhesive component which, transparent sheet, aforementioned transparent sheet and postscript which it tries to be able to look state change of submerging verification seal which postscript is done from surface submerging verification equipment which designates that it is constituted from submerging verification seal which consists of white high quality paper where red color printing is administered to both sides adhesive component and center which in both ends position of the white high quality paper which is done are arranged with water-based ink as feature

[Claim 2] As for aforementioned hole, submerging verification equipment which is stated in Claim 1 which designates that it is worn in the site which does not have fact that it stops being visible with the other part which is installed in lower case as feature.

[Claim 3] As for aforementioned transparent sheet, in order to surround periphery of the aforementioned hole, as water which penetrates from the aforementioned hole due to glueing with both surfaces adhesive component which glues the both surfaces is blocked assuming, that it was pushed in, concern which peels off will be submerging verification equipment which is stated in the Claim 1 which designates that it does as feature.

[Claim 4] As for aforementioned submerging verification seal, with the holder component on print substrate submerging verification equipment which is stated in Claim 1 which designates that it is constituted with little gap as feature.

[Claim 5] As for gap with aforementioned submerging verification seal and holder component on aforementioned print substrate, submerging verification equipment which is stated in Claim 4 which designates narrow thing as feature in comparison with thickness of submerging verification seal.

【請求項6】 前記保持部材は外部コネクタのハウジングと共用していることを特徴とする請求項1記載の水没確認装置。

【請求項7】 前記水没確認シールの下ケースへの貼付位置は、本体を直立させたときに前記外部コネクタのハンダ付部よりも下方であることを特徴とする請求項1記載の水没確認装置。|

【請求項8】 請求項1ないし請求項7に記載される水没確認装置を用いた携帯端末装置。

【請求項9】 請求項1ないし請求項7に記載される水没確認装置を用いた携帯電話装置。

#### 【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、水没確認装置に関し、特に携帯端末装置等に用いられ、当該装置が水没したか否かを下ケースを見ただけで判別しようよう構成したものである。

【0002】

【従来の技術】 従来、携帯端末装置、例えば携帯電話装置やPHS等で用いられる水没確認装置は、図6に示されるようなものが知られていた。図6において水没確認装置は、水没確認シール62が所定箇所に貼付された内部ユニット61と、内部ユニット61に貼付された水没確認シール62が透明シート65を介して見える所定箇所に穿けられた孔64を有する下ケース63とが合体されるようにして構成されている。

【0003】

【発明が解決しようとする課題】 従来の水没確認装置は、下ケース63に設けられた孔64の上に携帯端末装置の他の部品が搭載されるため、下ケース63に設けられた孔64を介して内部ユニット61に貼付された水没確認シール62の水没状態を直接的に確認することができないという問題を有していた。

[Claim 6] As for aforementioned holding member submerging verification equipment which is stated in Claim 1 which designates that it is common to the housing of outside connector as feature.

[Claim 7] As for adhered position to lower case of aforementioned submerging verification seal, submerging verification equipment which is stated in Claim 1 which designates that it is downward direction main body when standing upright, in comparison with solder attaching section of the aforementioned outside connector as feature.

[Claim 8] Portable terminal equipment which uses submerging verification equipment which is stated in Claim 1 through Claim 7.

[Claim 9] Portable telephone equipment which uses submerging verification equipment which is stated in Claim 1 through Claim 7.

#### [Description of the Invention]

[0001]

[Technological Field of Invention] This invention regards submerging verification equipment, it is used by the especially portable terminal equipment etc, it is something which in order at lower case you just looked to be possible to distinguish, forms whether or not which the this said equipment submerges.

[0002]

[Prior Art] Until recently, as for submerging verification equipment which is used with portable terminal equipment, for example portable telephone equipment and PHS etc, kind of those which are shown in Figure 6 were known. lower case 63 which possesses hole 64 engaged body to be done in the specific site which is visible is formed in Figure 6 submerging verification equipment in order inside unit 61 where submerging verification seal 62 is stuck to specified site and for submerging verification seal 62 which is stuck to inside unit 61 through transparent sheet 65 wears and others is.

[0003]

[Problems to be Solved by the Invention] As for conventional submerging verification equipment, because other part of portable terminal equipment is installed on hole 64 which is provided in the lower case 63, through hole 64 which is provided in lower case 63 it had possessed problem that it cannot verify submerging state of the submerging verification seal 62 which is stuck to interior unit 61 directly.

【0004】また、水没確認シール62は内部ユニット61の所定箇所に直接的に貼付され、また透明シート65は孔64の周囲を取り囲むようにして下ケース63に接着又は粘着されるために、水没確認シール62と透明シート65との間に密着性がなく、したがって本当に水没した状態でなくとも水没確認シール62が状態変化を起こしてしまうという問題を有していた。

【0005】上記のような問題を解決するために本発明は、携帯端末装置等が水没したか否かを下ケースを見ただけで判別しうる水没確認装置を提供することを目的とするものである。

【0006】

【課題を解決するための手段】本発明の水没確認装置は、水没確認が行なえる孔が設けられている下ケースと、前記孔の周囲を囲むように両面を接着する両面接着部材と、後記する水没確認シールの状態変化を表面から覗けるようにした透明シート、前記透明シート及び後記する白色上質紙の両端位置に配置される両面接着部材および中央に水性インクで赤色印刷が施された白色上質紙から成る水没確認シールとから構成されることを特徴とする。

【0007】

【発明の実施の形態】本発明における請求項1記載の発明は、水没確認が行なえる孔が設けられている下ケースと、前記孔の周囲を囲むように両面を接着する両面接着部材と、後記する水没確認シールの状態変化を表面から覗けるようにした透明シート、前記透明シート及び後記する白色上質紙の両端位置に配置される両面接着部材および中央に水性インクで赤色印刷が施された白色上質紙から成る水没確認シールとから構成されることを特徴とする水没確認装置としたものであり、携帯端末装置などが水没したか否かを下ケースを見ただけで判別しうるという作用を有する。

【0008】また、請求項2記載の発明は、前記孔は、下ケースに搭載される他の部品によって見えなくなることがない箇所に穿けられていることを特徴とする請求項

[0004] In addition, Submerging verification seal 62 is stuck by specified site of inside unit 61 directly, In addition transparent sheet 65 glueing or sticking it is done in lower case 63 with to surround periphery of hole for sake of, there is not a conformity with submerging verification seal 62 and the transparent sheet 65, not being a state which therefore is submerged truly also it had possessed problem that submerging verification seal 62 happens and finishes state change.

[0005] As description above this invention whether or not which portable terminal equipment etc submerges just looked at lower case is something which designates that the submerging verification equipment which it can distinguish is offered as the object in order to solve problem.

[0006]

[Means to Solve the Problems] As for submerging verification equipment of this invention, Hole which can do submerging verification is provided lower case where, In order to surround periphery of aforementioned hole, glues the both sides both side: adhesive component which, transparent sheet, aforementioned transparent sheet and postscript which it tries to be able to look state change of submerging verification seal which postscript is done from surface it designates that it is constituted from submerging verification seal which consists of the white high quality paper where red color printing is administered to both sides adhesive component and the center which in both ends position of white high quality paper which is done are arranged with water-based ink as feature.

[0007]

[Embodiment of Invention] Is stated in Claim 1 in this invention as for invention which, Hole which can do submerging verification is provided lower case where, In order to surround periphery of aforementioned hole, glues the both sides both side: adhesive component which, It tried to be able to look state change of submerging verification seal which postscript is done from surface transparent sheet, Aforementioned transparent sheet and it is something which is made the submerging verification equipment which designates that it is constituted from submerging verification seal which consists of white high quality paper where red color printing is administered to both sides adhesive component and center which in both ends position of white high quality paper which postscript is done are arranged with water-based ink as feature, whether or not which portable terminal equipment etc submerges it possesses action that just looked at lower case it can distinguish.

[0008] In addition, as for invention which is stated in Claim 2, as for the aforementioned hole, it is something which is made submerging verification equipment which is stated in Claim 1

1記載の水没確認装置としたものであり、下ケースに搭載される他の部品によって見えなくなることがないという作用を有する。

【0009】また、請求項3記載の発明は、前記透明シートは、前記孔の周囲を囲むように両面を接着する両面接着部材との接着により、前記孔から浸入する水を遮断すると共に押し込まれたとしても剥がれる虞れがないようにしたことを特徴とする請求項1記載の水没確認装置としたものであり、孔から浸入する水を遮断し、かつ悪戯などで押し込まれたとしても剥がれないという作用を有する。

【0010】また、請求項4記載の発明は、前記水没確認シールは、プリント基板上の保持部材との間でわずかな隙間をもって構成されていることを特徴とする請求項1記載の水没確認装置としたものであり、押し込まれたとしても剥がれないという作用を有する。という作用を有する。

【0011】また、請求項5記載の発明は、前記水没確認シールと前記プリント基板上の保持部材との間の隙間は、水没確認シールの厚みよりも狭いことを特徴とする請求項4記載の水没確認装置としたものであり、押し込まれたとしても剥がれないという作用を有する。

【0012】また、請求項6記載の発明は、前記保持部材は外部コネクタのハウジングと共用していることを特徴とする請求項1記載の水没確認装置としたものであり、狭いスペースを有効に利用することができるという作用を有する。

【0013】また、請求項7記載の発明は、前記水没確認シールの下ケースへの貼付位置は、本体を直立させたときに前記外部コネクタのハンダ付部よりも下方であることを特徴とする請求項1記載の水没確認装置としたものであり、外部コネクタのハンダ付部付近を含めて水没を確認することができるという作用を有する。

【0014】また、請求項8記載の発明は、請求項1な

which designates that it is worn in site which does not have fact that it stops being visible with other part which is installed in lower case as feature, it possesses action that it is not times when it stops being visible with other part which is installed in the lower case.

[0009] In addition, Is stated in Claim 3 as for invention which, As for aforementioned transparent sheet, In order to surround periphery of aforementioned hole, in glueing with both surfaces adhesive component which glues both surfaces to depend, As water which penetrates from aforementioned hole is blocked assuming, that it was pushed in, concern which peels off will be to be something which is made submerging verification equipment which is stated in Claim 1 which designates thing which is done as feature, blocking water which penetrates from hole, it possesses action that we assumed it is not release, at same time that it was pushed in with mischief etc.

[0010] In addition, as for invention which is stated in Claim 4, as for the aforementioned submerging verification seal, it was something which is made submerging verification equipment which is stated in the Claim 1 which designates that it is constituted with little gap as feature with holder component on print substrate, it possesses action that we assumed it is not release, that it was pushed in. With it possesses action which is said.

[0011] In addition, as for invention which is stated in Claim 5, as for the gap with aforementioned submerging verification seal and the holder component on aforementioned print substrate, in comparison with thickness of the submerging verification seal it was something which is made the submerging verification equipment which is stated in Claim 4 which designates narrow thing as feature, it possesses action that we assumed it is not release, that it was pushed in.

[0012] In addition, as for invention which is stated in Claim 6, as for the aforementioned holding member it is something which is made submerging verification equipment which is stated in Claim 1 which designates that it is common to housing of outside connector as feature, it possesses the action that it can utilize narrow space effectively.

[0013] In addition, as for invention which is stated in Claim 7, as for the adhered position to lower case of aforementioned submerging verification seal, it is something which is made submerging verification equipment which is stated in Claim 1 which designates that it is a downward direction the main body when standing upright, in comparison with solder attaching section of aforementioned outside connector as feature, solder attaching section vicinity of outside connector is included and it possesses action that submerging can be verified.

[0014] In addition, invention which is stated in Claim 8 is some

いし請求項7に記載される水没確認装置を用いた携帯端末装置としたものであり、携帯端末装置において水没したか否かを下ケースを見ただけで判別しようという作用を有する。

【0015】また、請求項9記載の発明は、請求項1ないし請求項7に記載される水没確認装置を用いた携帯電話装置としたものであり、携帯電話装置において水没したか否かを下ケースを見ただけで判別しようという作用を有する。

【0016】以下、本発明の実施の形態について、図面を用いて説明する。

【0017】図1は、携帯端末装置、例えば携帯電話装置やPHSなどに用いられる本発明に係る水没確認装置の構成を示した断面図である。図1において水没確認装置は、孔3が設けられている下ケース2と、孔3の周囲を囲むように両面を接着する両面接着部材4と、孔3から浸入する水を遮断すると共に水没確認シール10の状態変化を表面から覗けるようにした透明シート5、透明シート5及び白色上質紙7の両端位置に配置される両面接着部材6および中央に水性インクで赤色印刷8が施された白色上質紙7から成る水没確認シール10とから構成されており、孔3は下ケース3に搭載される他の部品によって見えなくなることがない箇所に穿けられており、例えば保持部材1の上に位置される。

【0018】図2は、水没確認シール10の正面図を示しており、透明シート5の下にあり、その両端部において両面接着が可能な両面接着部材6が、また、中央に水性インクで赤色印刷8が施されている様子が理解される。また、図1の断面図に示されているように白色上質紙7と透明シート5との間に両面接着部材6が設けられていることから隙間9ができ、その結果、隙間9から水が入りやすくなるようにされている。

【0019】図3は、携帯端末装置、例えば携帯電話装置に用いられた水没確認装置の構成を示す断面図である。図3において水没確認装置は、携帯電話装置の下部に取り付けられている保持部材（外部コネクタ）1の上で下ケース2に設けられており、下ケース2を露出ただけで携帯端末装置、例えば携帯電話装置が水没したかどうかを判別することができる。

thing which is made portable terminal equipment which uses submerging verification equipment which is stated in Claim 1 through Claim 7, whether or not which is submerged in the portable terminal equipment it possesses action that just looked at lower case it can distinguish.

[0015] In addition, invention which is stated in Claim 9 is something which is made portable telephone equipment which uses submerging verification equipment which is stated in Claim 1 through Claim 7, whether or not which is submerged in the portable telephone equipment it possesses action that just looked at lower case it can distinguish.

[0016] You explain below, concerning embodiment of this invention, making use of the drawing.

[0017] As for Figure 1, it is a sectional view which shows constitution of the submerging verification equipment which relates to this invention which is used for portable terminal equipment, for example portable telephone equipment and PHS etc. In Figure 1 as for submerging verification equipment, Hole 3 is provided lower case 2 where, In order to surround periphery of hole 3, glues both sides the both sides adhesive component 4 which, As water which penetrates from hole 3 is blocked it tried to be able to look state change of submerging verification seal 10 from the surface transparent sheet 5, We are constituted from submerging verification seal 10 which consists of white high quality paper 7 where red color printing 8 is administered to both sides adhesive component 6 and center being arranged in both ends position of the transparent sheet 5 and white high quality paper 7 with water-based ink, hole 3 is worn in the site which does not have fact that it stops being visible with the other part which is installed in lower case 3 is located on the for example holding member 1.

[0018] Figure 2 has shown front view of submerging verification seal 10, is under transparent sheet 5, both sides adhesive component 6 whose both sides glueing is possible in the both ends, in addition, circumstances where red color printing 8 is administered to center with water-based ink understand. In addition, as shown in sectional view of Figure 1, gap 9 is possible from fact that both sides adhesive component 6 is provided with white high quality paper 7 and transparent sheet 5, as a result, water that tries becomes easy and to enter from the gap 9 becomes.

[0019] As for Figure 3, it is a sectional view which shows constitution of the submerging verification equipment which is used for portable terminal equipment and the for example portable telephone equipment. Submerging verification equipment on holder component (outside connector) 1 which is installed in the bottom of portable telephone equipment was provided in lower case 2 in Figure 3, it can distinguish whether or not just exposed lower case 2 portable terminal equipment and the for example

【0020】図4は、水没確認シールの組み立ての順序を示す分解斜視図である。図4において、中央に水性インクで赤色印刷8が施されている白色上質紙7の両端に両面接着部材6が載置・接着され、その両面接着部材6の上に透明シート5が載置・接着され、さらに透明シート5の上に中央に孔が設けられている両面接着部材4が載置・接着される。このようにして組み立てられた水没確認シールを下ケース2の孔3の周囲に両面接着部材4の孔が配置されるようにして接着されることにより、図1および図3のような構成となる。

【0021】したがって、下ケース2の孔3の周囲は両面接着部材4及び透明シート5により囲まれる構成となり、下ケース2の孔3から浸入する水を遮断することができるので、単なる湿気程度では水没確認シール10が状態変化することなく、また悪戯などで孔3から水没確認シール10が押し込まれたとしても剥がれる虞れもない。

【0022】図5は、図6に示した従来構成に対応させて本発明の構成を説明するための図である。図5において水没確認装置は、下ケース2の孔3に合わせて水没確認シール10が下側からあてがわれると、プリント基板11の所定箇所に取り付けられた保持部材1の上に配置された構成となるものである。

#### 【0023】

【発明の効果】上記の説明から明らかなように本発明は、孔が設けられている下ケースと、前記孔の周囲を囲むように両面を接着する両面接着部材と、前記孔から浸入する水を遮断すると共に後記する水没確認シールの状態変化を表面から覗けるようにした透明シートと、前記透明シートおよび後記する白色上質紙の両端位置に配置される両面接着部材および中央に水性インクで赤色印刷が施された白色上質紙から成る水没確認シールとから構成されることを特徴とするもので、無線端末装置などが水没したか否かを下ケースを見ただけで判別するという効果を有する。

portable telephone equipment submerged.

[0020] Figure 4 is exploded oblique diagram which shows order of assembly of the submerging verification seal. In Figure 4, both surfaces adhesive component 6 mount \* glues in both ends of the white high quality paper 7 where red color printing 8 is administered to center with the water-based ink, transparent sheet 5 mount \* glues on both surfaces adhesive component 6, furthermore the both surfaces adhesive component 4 where on transparent sheet 5 hole is provided in center glue the mount \*. It becomes constitution like Figure 1 and Figure 3 submerging verification seal which was assembled in this way in order for hole of the both surfaces adhesive component 4 to be arranged in periphery of hole 3 of lower case 2, by glueing.

[0021] Therefore, periphery of hole 3 of lower case 2 to become constitution which is surrounded by both surfaces adhesive component 4 and transparent sheet 5, because it is possible, to block water which penetrates from hole 3 of the lower case 2 with mere moisture vapor extent submerging verification seal 10 was not either a thing which state change is done, assuming, in addition that the submerging verification seal 10 was pushed in from hole 3 with such as mischief, there is not either a concern which peels off.

[0022] Figure 5 corresponding to past constitution which is shown in the Figure 6, is figure in order to explain constitution of this invention. In Figure 5 as for submerging verification equipment, adjusting to the hole 3 of lower case 2, when submerging verification seal 10 is applied from underside, it is something which becomes constitution which is arranged on holder component 1 which is installed in specified site of the print substrate 11.

#### [0023]

[Effects of the Invention] Way it is clear from above-mentioned explanation, as for this invention, Hole is provided lower case where, In order to surround periphery of aforementioned hole, glues the both sides both sides adhesive component which, As water which penetrates from aforementioned hole is blocked it tries to be able to look state change of submerging verification seal which postscript is done from surface transparent sheet which, Aforementioned transparent sheet and being something which designates that it is constituted from submerging verification seal which consists of white high quality paper where red color printing is administered to both sides adhesive component and the center which in both ends position of white high quality paper which postscript is done are arranged with water-based ink as feature, whether or not which radio terminal etc submerges it possesses effect that just looked at lower case it can distinguish.

【図面の簡単な説明】

【図1】本発明の実施の形態に係る水没確認装置の構成を示した断面図、

【図2】本発明の実施の形態に係る水没確認シールの正面図、

【図3】携帯端末装置に用いられた本発明の実施の形態に係る水没確認装置の構成を示す断面図、

【図4】本発明の実施の形態に係る水没確認装置の組み立ての順序を示す分解斜視図、

【図5】従来構成に対応させて本発明の構成を説明するための図、

【図6】従来の水没確認装置の構成を示した断面図である。

【符号の説明】

- 1 保持部材
- 2、63 下ケース
- 3、64 孔
- 4、6 両面接着部材
- 5、65 透明シート
- 7 白色上質紙
- 8 赤色印刷（水性インク）
- 9 隙間
- 10、62 水没確認シール
- 11 プリント基板
- 12 ハンダ付部

[Brief Explanation of the Drawing(s)]

[Figure 1] Sectional view which shows constitution of submerging verification equipment which relates to embodiment of this invention,

[Figure 2] Front view of submerging verification seal which relates to the embodiment of this invention,

[Figure 3] Sectional view which shows constitution of submerging verification equipment which relates to embodiment of this invention which is used for the portable terminal equipment,

[Figure 4] Exploded oblique diagram which shows order of assembly of submerging verification equipment which relates to embodiment of this invention,

[Figure 5] Corresponding to past constitution, figure in order to explain the constitution of this invention,

[Figure 6] It is a sectional view which shows constitution of conventional submerging verification equipment.

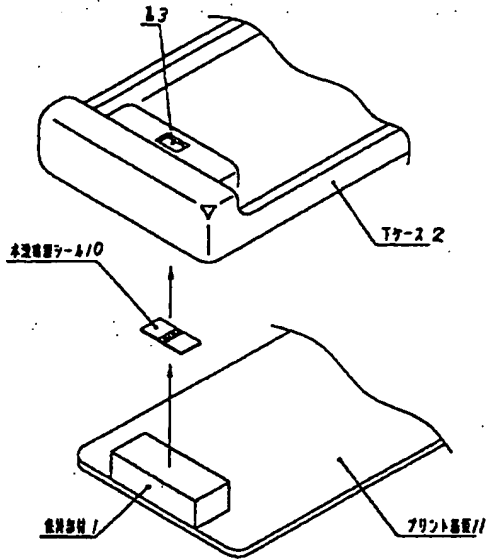
[Explanation of Reference Signs in Drawings]

- 1 holder component
- 2, 63 lower case
- 3, 64 hole
- 4 and 6 both surfaces adhesive component
- 5, 65 transparent sheet
- 7 white high quality paper
- 8 red color printing ( water-based ink )
- 9 gap
- 10 and 62 submerging verification seal
- 11 print substrate
- 12 solder attaching section



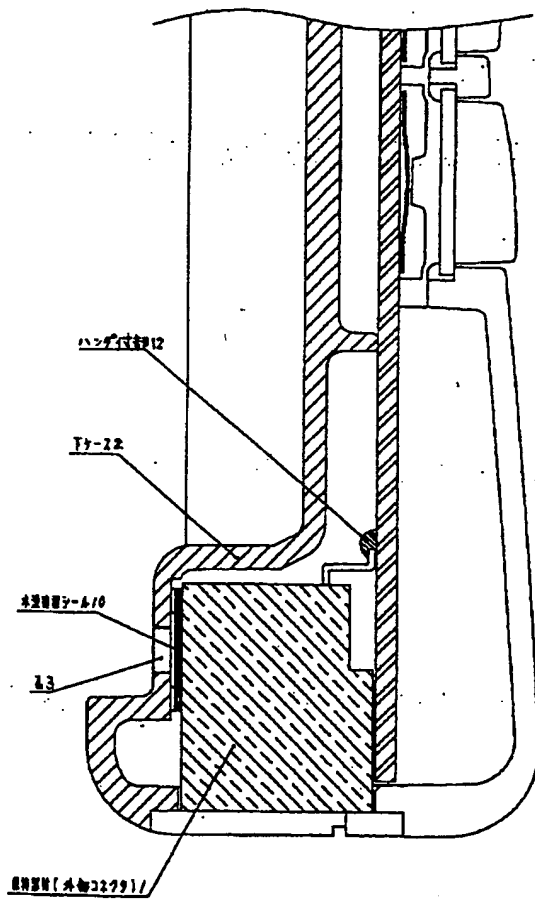
【図5】

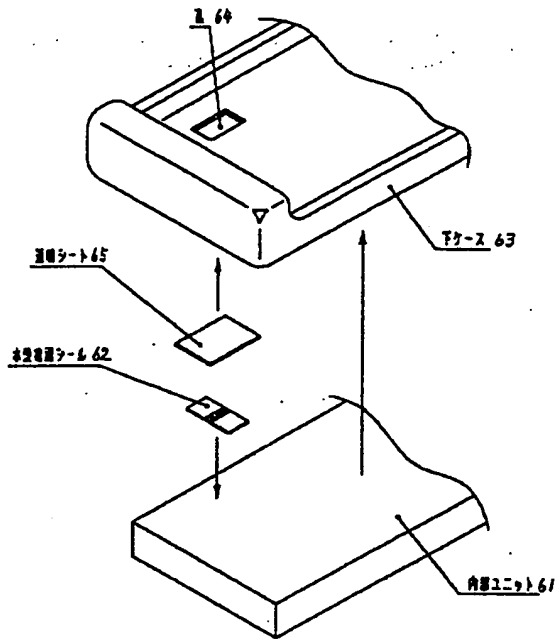
[Figure 5]



【図3】

[Figure 3]





【図 6】

[Figure 6]